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## GEOLOGY AND PALÆONTOLOGY.

MINERAL WAX IN UTAH.—Prof. J. E. Clayton of Salt Lake, has recently discovered an immense deposit of mineral wax in Southern Utah. He describes it as sixty miles long by twenty wide, in some places forming a bed twenty feet thick. It contains more or less clay in seams and layers. Prof. Newberry finds it to be ozocerite, and Prof. Wurtz has obtained from the same region zietriskisite.

MERYCOPATER AND HOPLOPHONEUS.—Having recently had the opportunity of examining the entire dentition of the lower jaw of the *Hyopotamus guyotianus* Cope,<sup>1</sup> I find that it does not belong to the genus to which I referred it, but to an allied one, which appears to be undescribed. It differs from *Hyopotamus*, having but three premolars and a simple diastema. The premolars are wide, and the last has four crescentoid cones, as in the first true molar (crowns of first and second lost). Canine well developed, compressed, anterior. The cones, both internal and external have a crescentic section. The inner cones are convex on the inner side in *Gelocus*, which also differs from this form as does *Hyopotamus*, in the simple compressed form of the premolars. The present genus may be called *Merycopater*. *M. guyotianus* was as large as the white-lipped peccary.

Fine specimens of the *Machærodus brachyops* Cope (l. c. p. 10), show that it possessed an inferior tubercular tooth. It therefore belongs to the genus *Hoplophoneus* Cope. It is a very much larger species than the *H. oreodontis* Cope.—E. D. Cope.

THE NATURE OF EÖZOÖN.—Dr. Karl Möbius contributes to Palæontographica for 1878, the results of his investigations into the structure of Eözoön from Canada. He used specimens received from Drs. Dawson and Carpenter. As an expert in the study of recent *Foraminifera* (*Rhizopoda*), Dr. Möbius's opinion carries with it much weight. His conclusion is, that the columns of the Eözoön limestone which Carpenter and Dawson supposed to be the casts of a canal system of the "intermediate or supplemental skeletons," are simply casts of fissures of various and unsymmetrical shapes having no resemblance to the tubules of any organic being. They are mostly flat, and frequently interrupted. The fibrous material found between the serpentine and the calcareous masses, supposed to be casts of the canals of the walls of the chambers of Eözoön, such as exist in the *Foraminifera*, consists of prismatic crystals of chrysotile. Dr. Möbius does not believe them to be casts of tubes, since no tube walls or interspaces can be seen by high powers either with or without polarized light.

THE AGE OF THE LARAMIE.—Prof. Schimper, of Strasburg,

<sup>1</sup> Palæontological Bulletin, 30, p. 15, Proceed. Amer. Phil. Soc. for November, 1878.

writes to Mr. Lesquereux to this effect in regard to the fossil plants of the Laramie group :

"I do not cease reviewing and studying your last magnificent publications which have given to phytopaleontology an immense forward impetus. 'Par lesquelles vous avez faite faire un pas immense à la paleophytologie.' You ask me to express my opinion on the age of your flora of the lignitic. It seems to me impossible that one can see in it anything else than a tertiary flora, unless one wishes to reverse all the data acquired by science until now. I consider this flora just as you do, as truly (*franchement*) eocene, not even pliocene, perhaps contemporaneous with Mt. Bolca or eocene, possibly a little more recent. It is very possible that in marine strata, intermediate to the land or lignitic deposits, one may find remains of cretaceous animals. It has been observed already many times that the modification to which the inhabitants of the land have been subjected, do not accord with those exhibited by the inhabitants of the sea. These are very often backward in their development, and this is quite natural from the slower action of the climate or climatic influence upon the inhabitants of the sea than upon those of the land. The facies of your lignitic vegetation is tertiary; it is impossible to change that. Messrs. the geologists have to decide as they may find proper."

ON THE OCCURRENCE OF A SOLID HYDROCARBON IN THE ERUPTIVE ROCKS OF NEW JERSEY.—Mr. I. C. Russell states that associated with the sheet of trap rock known as the First Newark Mountain, which traverses the central portion of the Triassic formation of New Jersey, there occurs near Plainfield, at an abandoned copper mine on the western slope of the mountain—the upper surface of the trap sheet—an amygdaloid trap passing into a metamorphosed shale. In this region it is frequently impossible to distinguish in small exposures the genuine trap from the metamorphosed shales that rest in contact with it. Many of the cavities in the amygdaloidal rock are filled with a brilliant jet black carbonaceous mineral resembling very closely the albertite of New Brunswick. These cavities are frequently tubular in shape having a length of three or four inches and usually a diameter of about a quarter of an inch. Sometimes these tubes were lined throughout by infiltration, with a coating of quartz or calcite a line or two in thickness, before the carbonaceous material was introduced. Above the amygdaloid is found a metamorphosed shale which still retains its bedded structure, and in places presents something of the usual reddish color of the unaltered shales. This altered rock is traversed in various directions by seams and fissures, which are frequently filled with the same albertite-like mineral. Resting upon these metamorphosed beds occur slates, shales and sandstones, which contain fossil fishes and a considerable abundance of obscure vegetable remains. It seems evident that these organic bodies furnished by their

decomposition the carbonaceous material in the associated rocks. The heat derived from the slowly cooling injected rocks may have played an important part in this process.

The mineral whose geological occurrence we have thus described, gives, when subjected to chemical tests, almost precisely the same reactions as albertite. It is insoluble in heated acids and alkalies, and is but sparingly if at all soluble in alcohol, ether or oil of turpentine. Like albertite, also, it is infusible, but softens by heat and burns with a yellow flame, emitting an agreeable odor. It gives when incinerated a little less than 0.10 per cent. of ash.—*Amer. Jour. Sci. and Arts, August.*

THE HUDSON RIVER GROUP AT POUGHKEEPSIE.—As the result of the examination of the Hudson River region by Profs. Logan and Hall, these gentlemen traced the "Hudson River Group" as far as Rhineback, and gave that as its eastern boundary. At a June meeting of the Poughkeepsie Society of Natural Science, Prof. T. Nelson Dale (who has temporarily occupied the chair of geology at Vassar College) reported the occurrence of fossils *in situ* in the college grounds. The specimens shown and presented by him to the society were *Leptaena sericea*, an *Orthis* (undetermined) and some fragments of Encrinites. A few days ago Prof. Dale and the secretary of the Poughkeepsie Society of Natural Science, Dr. E. H. Parker, made a careful examination of the rocks on the west side of the river, opposite Poughkeepsie, and about a mile back, and were fortunate enough to discover large quantities of the same species of Brachiopods as those mentioned above, as well as some excellent specimens of what appear to be Furoids, and similar to what Dana figures as *Buthotrephis*. This discovery would seem to show that the "Hudson River Group" extends perhaps as far as the Highlands.—*W. R. Gerard.*

#### GEOGRAPHY AND TRAVELS.<sup>1</sup>

AMERICAN GEOGRAPHICAL SOCIETY. PRESIDENT'S ANNUAL ADDRESS.—At the meeting of this Society held in New York, February 11, 1879, the President, Chief Justice Daly, delivered his annual address in which, instead of giving the usual summary of the progress of geographical exploration and research during the past year, he chose as his subject, "The History of Cartography, or the Progress of the Art of Map-making from the Earliest Times to those of Mercator." Cartographic Art, he stated, is probably as old or older than the invention of the alphabet, and has been found in use among races who had had no previous contact with civilized man nor any written language. The Esquimaux understood the charts of Parry and Ross and even extended lines of coast unknown to the explorers. The North American Indians have always had maps which were serviceable to them.

<sup>1</sup> Edited by ELLIS H. YARNALL, Philadelphia.